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THE EXTENSION ANIMAL HUSBANDMAN

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ANIMAL HUSBANDRY EXTENSION WORK IN OHIO

By John W. Wuichet,
Extension Specialist in Animal Husbandry

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Although not a great deal of the animal-husbandry extension work in this State is done with the breeders of purebreds, yet some rather unusual livestock traditions connected with the purebred industry have contributed to the interest of the work. It was into Ohio, that the first importation of Shorthorn cattle was made and an appropriate monument marks the spot of the arrival. Whitehall Sultan, Avondale, and many other famous bulls of the breed first saw the light of day on Ohio farms. In Delaware County there are more purebred Percheron horses than in a like area even in the LaPerche district of France and horses from this county have found their way into studs all over the world. The Poland China hog had its origin in Ohio and another monument marks the spot where the first pedigree for the breed was written. The first Hampshire pedigree was written for an Ohio breeder and the first public sale of Hampshires ever held took place at Radnor. Not so long ago, Ohio led the world in the production of fine-wool sheep and to-day, many of the largest wool markets retain a separate classification for Ohio wools because of their high quality. These, and many other similar traditions involving practically all the well known breeds, have served to keep alive an active interest in livestock development and improvement.

Our animal husbandry extension staff consists of five members: Two in dairy production, one for hogs, one for sheep, and one handling beef-cattle and horse work. With certain types of projects, however, especially those involving meat animals some of the work is interchangeable. From the standpoint of percentage of farm income, dairy cattle head the list, followed in order by swine, beef cattle, sheep, and horses.

Swine

The Pork Production Club which involves all of the problems of production is one of the major swine projects. This differs from many similar projects in that it is not a contest in any sense, but a goal or standard is set and all who attain the goal are accorded the same recognition. The principal standard is that all sows, on any farm, farrowing within a specified period must produce litters which have an average weight of 1,400 pounds at 180 days of age. To attain such a standard, the cooperator must automatically follow most of the approved practices of herd management and feeding. These herds are used as demonstration centers for the community.

In this project, only 13 herds reached the goal in 1932 but that is a larger percentage in proportion to the total enrollment than in any previous year which shows that, while the standards may be a little too high for the average producer, some progress is being made in developing high-producing herds. These 13 herds averaged 7 sows, with litters averaging 7.4 pigs at 180 days. The heaviest litter average was 1,909 pounds and the lowest 1,462 pounds. In the four years of operation, 39 men have qualified for membership in the club, of which 7 have reached the goal in two of the four years and one breeder has qualified three years in succession.

Another type of project which involves all meat animals, with special emphasis on hogs, has received considerable attention during the last year or more. The project consists largely of tours to one of the larger terminal markets in Ohio or nearby. Groups of 40 to 100 persons are taken through the market where every phase of the marketing machinery is explained in detail. Talks are given by the manager of the stockyards, the market supervisor, the market news reporter, and the manager of one or more of the commission companies. These are followed by a session in each division of the yards where market grades and all factors influencing them are thoroughly discussed and demonstrated. Then comes a trip through a packing plant where the relationship of grades to carcass values is further demonstrated. Usually these tours are followed by local meetings in the communities from which the group came, when the factors shown on the market are tied in with a production program. Between 5,000 and 6,000 livestock producers took advantage of these tours last year and many more are scheduled for the coming season.

In addition to these projects, there is the work with feeding schools, sanitation, and assistance with the 4-H Pig Club.

Beef Cattle

Ohio is a beef-cattle-feeding State rather than a beef-cattle-producing State, consequently most of the work in this connection has been along the lines of cattle-feeding demonstrations and tours. These include not only demonstrations of various feeding methods but also the response of different grades of cattle to the various systems of feeding. In addition, the beef-calf club work more than doubled last year with the prospect of still further increase. Some sections of the State seem to be well adapted to the production of commercial cattle and this line of activity is being developed as rapidly as possible in those sections. Feeding schools are also a part of the beef-cattle program.

Cost-account records of cattle feeding have been a prominent part of the beef-cattle program and were kept in seven of the leading cattle-feeding counties of the State. Records were kept with 55 different feeders in these counties. Following the completion of the feeding period, tours were held in each of these seven counties and the cattle were appraised by commission salesmen from different markets. The cost-account records and feeding data were all made available on mimeograph sheets for those attending the tours in each of the counties. Beef calves to the number of 1,200 were fed by 4-H club boys and girls throughout the State in 1932 and present indications are that the number in 1933 will exceed 2,000.

Sheep

Extension work in sheep is carried on largely through the medium of county sheepmen's associations of which there are 32 in the leading sheep counties of the State. All these counties are working on the Ohio Sheep-improvement program which is predicated on the following points.

The use of purebred rams of acceptable type.
The culling of the ewe flock on the basis of performance.
The docking of all lambs and the castrating of all buck lambs intended for market purposes.
The grain feeding of all lambs for market after weaning.
The control of internal parasites through monthly or bi-monthly drenching, depending upon the number of pastures available.
The production of tag-free fleeces, properly packaged and identified by the name of the grower and his address.

During 1932 this program has been carried out in its entirety in 24 counties of the State. In these counties a sheep field day was held in which the following program was carried out:

Shearing demonstration with the power machine
Power and hand shearing contest for both juniors and seniors.
Wool-grading demonstration and a county wool show.
A lamb-carcass cutting demonstration.
A lamb luncheon.
A market-lamb grading demonstration.
Docking and castrating demonstrations.
Parasite-control and posting demonstrations.

In addition, regular letters on some phase of breeding, management, or marketing have been sent to all sheepmen in the State who desire them. Ram-selection and ewe-culling demonstrations have been held in a number of the counties. In a few of them there have been ram sales in connection with the demonstrations. In one county 48 purebred rams were placed at the ram-selection and ewe-culling demonstration.

Horses

The horse extension work has received more impetus during the last year than at any previous time, probably due to the general economic situation, especially in regard to the multiple-hitch work. The latest development has been a school for county agents in cooperation with the department of agricultural engineering. More than 20 agents have availed themselves of the opportunities of this school, where they actually make parts of the necessary equipment, assemble it, and then hitch the teams and do the plowing.

As a means of creating further interest in horse work, the pulling contests with the use of a dynamometer have been continued and colt clubs have been organized in a number of counties.

4-H Colt Clubs were begun in Ohio in 1931 with only one county having such a project. Six counties took up this project in 1932. The demand for big-team hitches has also greatly increased this year although only one county did intensive work in carrying out the project in detail. In this county 204 farmers adopted the use of the hitch for units of four or more horses. In recent weeks 20 county agents have availed themselves of special shop days for the purpose of learning how to make up a hitch and put it into operation in the field. For this purpose the county agents were placed in groups of 5 and the work was carried on under the direction of the departments of agricultural engineering and animal husbandry cooperating.

In the above brief outline of the animal-husbandry extension work in Ohio only a few of the high spots have been mentioned. In addition there are, of course, the usual publicity material, bulletins, miscellaneous meetings, and minor projects.

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Surplus Lantern Slides

The Bureau of Animal Industry has on hand a surplus of regulation glass lantern slides illustrating breeds of light and heavy horses, beef cattle, swine, sheep and goats, and many other animal-husbandry subjects. These slides are available to responsible agencies on an indefinite loan basis at cost of transportation. Address inquiries to Dr. H. C. McPhee, U. S. Bureau of Animal Industry, Washington, D.C.

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NEW METHOD SIMPLIFIES CLEAN-WOOL YIELD AND DENSITY DETERMINATION OF FLEECES

By J. I. Hardy, Senior Animal Fiber Technologist,
U. S. Bureau of Animal Industry

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A simple, quick, and inexpensive method of determining the clean-wool yield and density of a fleece, from a small sample of the wool, has been developed by the writer in cooperation with representatives of other agencies. Since its application offers material aid to the wool grower who desires to build up a flock of sheep producing heavy-shearing, light-shrinking fleeces, the method should interest animal-husbandry extension workers in the field of wool improvement.

The clean-wool content of a fleece is usually obtained by the following procedure: Weighing the fleece, washing out the grease and dirt, evaporating the moisture, and again weighing the clean wool. Whole fleeces are sometimes subjected to this procedure but due to the expense and labor involved, small samples of the fleece weighing a pound or less are generally used. Facilities for conducting such work are found only in the laboratories of those institutions which are carrying on rather technical wool-research programs. Furthermore the process takes more time than is ordinarily available in commercial enterprises.

The new method consists in: Shearing, with a power clipper, a swath of wool exactly 1 inch wide and 4 inches long from the side of the sheep; weighing the sample so obtained; cleaning it by the ordinary dry-cleaning process used by those establishments which purify their gasoline by the alkali process; and then weighing the cleaned sample. From the difference between the two weights the percentage yield of clean, dry wool is computed for the sample. This percentage when applied to the weight of the entire fleece will furnish, with sufficient accuracy for practical breeding operations, the amount of clean wool the fleece will yield. The fact that the wool sample is taken from a measured area of the skin provides the basis for calculating the density of the fleece. This is done by dividing the weight of the clean wool per square inch by the length of the staple.

In preparing the samples of wool for the dry-cleaning process, each sample is placed in an open-mesh bag of about 6

inches by 8 inches and marking with a metal tag for identification. Twenty-five or more of such bags containing the individual samples may be placed in a larger bag made of strong open-mesh cloth and of sufficient size to accommodate readily the smaller bags. Bags 24 inches by 36 inches have been found satisfactory for 25 samples. Such large bags are then delivered to the commercial dry-cleaning establishment with instructions to subject them, without removal of the small bags, to the regular process used in dry cleaning woolen clothing. As many as 200 of these samples may be cleaned in an hour and deodorized in two hours. Any foreign matter remaining in the samples after cleaning can be removed readily by teasing the fibers apart with the fingers and allowing the impurities to fall out.

A comparative test of this method was made in which 5 samples of heavy- and 5 samples of light-shrinking fine wools, weighing in air-dry condition 20 grams each, were scoured with soap and water in the usual manner, and similar lots of samples were dry cleaned at a commercial dry-cleaning plant. The results are shown in the following table:

Comparison of percentages of dry, clean wool by dry-cleaning and scouring methods

Type and source of samples	Dry-cleaning method				Scouring method			
	Sample No.	Bone dry		Clean wool	Sample No.	Bone Dry		Clean wool
		Greasy wt.	Clean wt.			Greasy wt.	Clean wt.	
		Grams	Grams	Percent		Grams	Grams	Percent
Heavy-shrinking wool from Wyoming	1	19.56	2.99	15.29	1	19.56	3.09	15.80
	2	19.56	3.51	17.94	2	19.56	3.12	15.95
	3	19.56	3.05	15.59	3	19.56	2.89	14.78
	4	19.56	3.29	16.82	4	19.56	3.02	15.44
	5	19.56	3.04	15.54	5	19.56	3.18	16.26
	Av.	19.56	3.18	16.26	Av.	19.56	3.06	15.64
Light-shrinking wool from Australia	6	18.43	13.31	72.22	6	18.43	12.75	69.18
	7	18.43	13.13	71.24	7	18.43	12.78	69.34
	8	18.43	13.25	71.89	8	18.43	12.62	68.48
	9	18.43	13.28	72.06	9	18.43	12.79	69.40
	10	18.43	13.20	71.62	10	18.43	12.98	70.43
	Av.	18.43	13.23	71.84	Av.	18.43	12.78	69.34

For conditions where an electric clipper is not available for obtaining the samples of wool from the sheep, a home-made apparatus has been devised for the purpose. It consists essentially of a clipper head with the usual flexible shaft attachment. The flexible shaft is connected with an ordinary hand-operated emery-wheel unit by means of a sprocket-wheel hub of a bicycle, in order

to obtain the necessary speed. The emery wheel is replaced by a pulley from which a sewing-machine belt transfers the power to another pulley of one-fourth the size which is fixed to the opposite end of the bicycle hub, thereby building up a proper speed.

This method may have some application in the field of commercial-shrinkage determinations but is primarily intended for those who are seeking a practical measuring stick to guide them in flock improvement for wool production. The writer will be glad to furnish additional information to those interested.

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Indiana Multiple Hitches

Inquiries from farmers eager to learn the combination of hitches, that enable one man to operate larger machinery with horses, brought 57 farmers together in two demonstrations in Vermillion County, September 14. A gang plow was used at each meeting to show the use of four, five, or six horses driven with one pair of lines on the lead team and buck lines and lead chains to guide the others. Different farmers did the driving to acquaint themselves with principles of the hitch and the ease with which it operated. Buck lines were made, lead chains were examined, and eveners were used as a pattern. In driving the plow, farmers noticed the ease of operation and simplicity of the whole equipment. In actually using this time-, labor-, and money-saving device, they were enthusiastic to try one of their own and are already reporting satisfactory results.

The multiple-hitch plowing contest held October 18th, on the Floyd McDonald farm in Hamilton County, was a result of the campaign begun two years ago. In the spring of 1931, a county meeting was held for leaders, who later held hitch demonstrations. During the year the attention of all farmers raising horses was called to these leaders and others using the multiple hitch. The last effort to spread the use of teams in more economical units was the plowing contest in which 14 teams competed. There were four classes: Four-horse, five horse, six-horse, and nine-horse teams. Views taken during the day were arranged on a large cardboard in the form of a poster along with literature regarding the use of horses in big teams, and placed in local show windows, where they attracted a great deal of attention resulting in a number of inquiries for further information. The plowing contest was sponsored by the Horse Association of America; Hamilton County Breeders' Association; Noblesville Kiwanis Club; and the Noblesville Daily Ledger in cooperation with the county agent's office.

--Purdue Extension News Notes

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SWINE-HERD-IMPROVEMENT PROJECTS IN MINNESOTA

by
H. G. Zavoral, Extension Animal Husbandman

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Ton-litter work was introduced in Minnesota as an extension project in 1923. The tenth annual contest closed November 15th this year with 43 contestants reporting as being successful in producing a ton or more of pork in 180 days. There were 111 entries from 39 counties which started in the contest; 20 counties reported raising one or more ton litters. Scarcity of feed and the low price of hogs were the reasons for the small number of entries in 1932 compared to previous years. Seventy per cent or more of the contestants are 4-H club members. The ton-litter project has been, and will continue to be a good advanced project for 4-H club members.

This work has helped us to come in contact with people interested in swine-production problems. Through circular letters, bulletins, and farm visits, hundreds of people have been reached. These contacts were made with a definite purpose and were of great value in getting cooperators for follow-up projects.

The principal object of the ton-litter contest is to raise more pigs per litter and grow them to a marketable weight in six months. Too many producers require 8 to 11 months time to reach the required weight. The comparisons that contestants can get from these contests are of great value.

The production of a ton or more of pork from one sow in 180 days is a real test of swine raisers' methods and is attained only by those who are most efficient. It involves every necessary step in swine raising, namely, good breeding, proper feeding, good management, and knowledge of market prices and demand. The shorter feeding period requires less feed for maintenance and lessens the risk of disease. Hog producers who have adequate equipment for raising early spring pigs and a supply of feed should market their pigs in 6 months. Pigs sold on the early market have in the past brought considerably more on an average than those marketed late when the bulk of the hogs are sold.

The size of the litter and rapidity of gains are the outstanding factors affecting production cost. Profit in pork production is determined by the difference between cost of production and market returns. Early farrowed pigs, crowded for the market

from the day they begin to eat, usually are more profitable on account of the higher price when they are marketed.

Observations indicate that the outstanding factors that determine the success in the ton-litter work and profit in pork production are:

1. Use of well-bred sows of improved type that will raise and wean large litters.
2. Proper feeding of sows during gestation and farrowing period to insure good, strong, healthy, vigorous pigs so that more pigs may be sold.
3. Control of diseases and parasites by practicing a system of sanitation.
4. Providing abundance of water, leguminous pasture, and sufficient minerals.
5. Full feeding of a balanced ration using the cheapest source of proteins available.

In 1927 the Pork-Production Contest was started. Its object was to locate the most efficient producers of pork and to demonstrate the most effective methods of breeding, feeding, and management. Unlike the ton-litter contest, this takes in every sow on the farm that farrows. Since 1931 the project has been divided into two divisions. Herds of 5 to 8 sows, inclusive, and herds consisting of 9 sows or more. Awards are made on the basis of the average number of pounds of pork per sow when the pigs are 180 days' old.

For the last two years an assistant county agent has devoted a considerable part of his time to this work in Mower County. In 1931, 99 cooperators were enrolled in this county and 55 for 1932. Shortage of feed was the principal reason for the decrease in numbers. All the sows were ear tagged and all the pigs were marked. Feed records were kept on all herds and all the hogs were weighed at the close of the contest.

The following results were obtained in this one county in 1931:

The top ten men saved 83 percent of all pigs farrowed
The average man saved 73 percent of all pigs farrowed
The low ten men saved 50 percent of all pigs farrowed.

Why the difference in results for the top ten and the low ten? The following facts offer some explanation.

Of the top ten men in the project:

9 washed their sows before farrowing;
10 scrubbed their farrowing houses;
9 had clean pastures;
9 practiced the entire sanitation program;

6 had alfalfa, rape, or clover pasture;
10 fed protein supplement in the ration;
8 used self-feeders, and
9 used water fountains.

Of the low ten men in the project:

3 washed their sows before farrowing;
2 scrubbed their farrowing houses;
2 had clean pastures;
1 practiced the entire sanitation program;
1 had alfalfa, rape, or clover pasture;
1 used protein supplements;
1 used a self-feeder; and
3 used water fountains.

Those who had fairly early farrowed pigs and fed and cared for them so they were ready for market in 180 days got $6.85 per 100 pounds for them. Others who had later pigs, got as low as $3.50 per 100 pounds for pigs of the same weight. The average feed cost per 100 pounds of pork (live weight produced) by the 10 top farmers was $3.38 and the average selling price $4.90. The average feed cost per 100 pounds of pork for all was $3.93 and the average selling price $4.45 per 100 pounds. The average feed cost for 100 pounds of pork for 10 low herds was $6.45 and the average selling price $3.37, or an actual loss of $3.08 per 100 pounds of pork.

In other words, the 10 top farmers received for their effort $2.00 more for a 200-pound pig than the average and $8.16 more per pig than those in the low class. At that rate, the average man among the top 10 made $112 more for the average herd of 56 pigs than the average man of the entire contest.

Conclusions

The following statements by the farmers, most successful in the contest, and the facts stated above show that the most important factors for efficient and profitable swine production are:

The use of good-type, vigorous, well-bred breeding stock that will make rapid and economical gains;
Proper feeding and care of the brood sows;
Saving and raising a high average number of pigs per litter;
The strict adherence to the sanitation system;
Making efficient use of protein supplements;
Liberal feeding along with good pasture;
Getting pigs on the best market at the proper weight in the shortest possible time.

Recently a new plan known as the Minnesota Sow-Testing Project has been introduced.

The principal object is to select brood sows from litters of pigs of heaviest weights at 56 days of age. The requirements are:

An enrollment card must be sent in for each cooperator.
The county agent should select so far as possible only those men who probably will cooperate in this project for more than one year.
Hog producers enrolling in this project must follow the swine sanitation plan.
Each litter of pigs must be ear notched during the first week of age and a report made showing the date of farrow, sire, dam, and numbers of live pigs of each sex.
The boar pigs, except purebreds to be sold as sires, should be castrated before the litter is weaned, preferably at 4 to 6 weeks of age.
At an average age of 56 days the pigs should be weaned. (A variation of 10 days in the ages of several litters weaned at the same time is permissible, but more difference than this will make it impossible to compare accurately the weights of different litters).
If possible, every pig should be weighed at the time of weaning and the individual weight and sex reported on the blanks provided. Litter weights will be accepted if the total number and sex of the pigs are reported also. This weighing should be done by the county agent with his own scale.
The selection of gilts for brood sows to raise the next crop of pigs is to be made from the litters of heaviest weights at weaning time. If old sows are to be retained, culling should be done on the basis of the weights of litters, giving consideration to any accidental conditions affecting certain litters.
The pigs are to be fed according to the plans of the owner.
As accurate weights by litters as is possible must be reported at marketing time.
It is highly desirable and strongly recommended that a slaughter test be made of two average pigs from each litter when weighing 200 to 225 pounds each. The county agent will be given full instructions and all the help possible in conducting the slaughter test.

Information gathered from the sow-testing project is of

great value, but does not give figures such as weights or economy of gain. All experienced workers know how hard it is to get accurate statistical information from farmers. In our production work we especially recommended that farmers weigh their pigs at 56 days of age. Of course they are again weighed at 180 days at the close of the contest. The heaviest pigs at 56 days of age or at about weaning time were invariably the heaviest at 180 days. We have not recommended weighing at birth, but most of the pigs that were the heaviest at 56 days were heaviest at birth. No official slaughter tests have been made. According to E. Z. Russell of the U. S. Department of Agriculture, birth weight has a decided influence on the percentage of pigs weaned. Our observations are similar in that total litter weights of heaviest litters have greater average weight per pig. We do not know of a more important project in swine work than this method of sow testing. If there is anything to the theory of heredity, a swine grower should certainly be able to increase the efficiency of the brood sows. Farmers in Minnesota who have followed this method have been winners in the Pork-Production Contest. They save more pigs per litter and their average weights are larger.

Testing has been carried on officially at the Minnesota station in the form of Swine Record of Performance the last four years. The rules outlined by the National Swine Record of Performance committee have been followed. This is not an extension project, but the animal husbandry specialist is in position to get cooperators to furnish pigs for the tests. The results are official and we have found that the information obtained is of great value in extension work. Few farmers can be induced to keep records. If they can not keep these records on their own farms, the Record of Performance work offers the best opportunity to select and develop strains of hogs which will show low feed costs and high carcass value.

Other swine-improvement projects receiving attention by the extension specialist are: Sanitation, purebred-gilt clubs, fat-barrow contests, and brood-sow-selection demonstrations.

The first barrow show for adults was held at the Minnesota State Fair this year. One hundred and fifty barrows were exhibited. The judging of these barrows drew more attention than the breeding classes. The ultimate end of the hog is the pork barrel and barrow shows should and will be encouraged in the future.

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MEAT WORK WITH COUNTY AGENTS IN TEXAS

by
Roy W. Snyder, Texas Extension Service.

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One hundred and seventy-four county agents are putting over the meat program in Texas. Every agent in the State has devoted at least a short time this winter or last, helping the farmer prepare some cured and canned meat. With a very few exceptions each county agent in the State has had an opportunity to take part in a farm meat demonstration supervised by the specialist.

Method of Covering State in Short Time

Because of the enormous size of Texas which has a total of 254 counties and 174 county agents, it was necessary to adopt the training-school method to assist the agents in the early meat program. It can readily be seen that the specialist's part of the work had to be placed on such a basis in order to render service when it was needed to the entire State. The kind of meat work conducted, whether beef, pork, or lamb, varied according to the locality in the State. Some sections were more interested in beef and lamb than in pork. East Texas and the panhandle were particularly interested in pork. Demands therefore influenced the kinds of training schools and the manner of conducting them.

Methods of Conducting Training Schools

All meat work so far has been done in close cooperation with the home-industry specialist. Generally the meat specialist and the home-industry specialist traveled and worked together. A demonstration usually required one and one-half days. Killing was done the afternoon of the first day and the cutting, curing, lard rendering, and canning was done the second day. After selecting a county in which the demonstration was to be held, usually four and not more than six county agents from nearby counties were invited to attend the meeting. Where they expressly desired they were each allowed to bring one farmer or farmer's wife.

Animals Needed for the Demonstration

Usually for a pork demonstration, we were able to arrange for a hog for each agent in attendance. This made it possible for each man to have two sides of pork to cut and practice on. In most instances only one-half a beef carcass was provided for each

agent to cut, as it was more difficult to locate beef and most of the beef had already been canned. Canning more than two beeves increased the load on the home-industry specialists to the extent that their program became a beef-canning enterprise rather than a training school.

Results

Our methods of cutting and curing hogs are talked of all over the State. This is the start of the third season of meat work in Texas with more and more interest being developed in the recommended methods of handling meat on the farm. The county agents have put it over and the training school has been shown to be the only means of getting the meat program to them in a satisfactory manner. Local meat shows have been growing in popularity. Generally they are confined to a county, although in several instances two or three counties have shown together. Meat shows have been one of the best means of stimulating the work and also have been an excellent means of improving the quality of farm-cured meat. In every instance at these shows canned meat was shown as well as cured pork. The Lubbock, Texas, Calf, Pig and Meat Show of the last two years has been the most successful show held so far, with still greater interest manifested for this winter's event.

Where Do We Go From Here?

Farmers are becoming more interested in distributing their killing over a 12-months period rather than trying to guess the weather and trusting to luck that it will stay cold enough to cure out what pork will be needed. Another very popular idea is to cure more beef so that beef products need not all come from the can. It is also desirable to have beef products available throughout the year rather than just during winter. The two problems just mentioned must be approached through the use of some kind of artificial refrigeration.

Texas has plenty of cold-storage plants which manufacture ice, although not all are equipped to handle farmers' meats. Some are not interested in helping the farmers, while others charge an unreasonable price for storage in their coolers. Where cold-storage plants are not available or prices are out of reason the extension service is endorsing the idea that K. F. Warner of Washington, D. C., has developed, using the home-made meat-curing box.

The idea of summer curing pork is growing more popular in Texas. Last summer curing in June, July, and August was tried in

three different places. Seventy-five hogs were successfully handled in one community, 25 in another and 20 in another. All used the facilities of local cold-storage plants for chilling, cutting, and curing. As a result of the success of these three ventures other communities are going to try this method in the future. Thus they can kill when they are ready rather than wait for the weather to turn cold.

Meat work has been one means of interesting the rancher or farmer in better management of his stock. This applies especially to the sheepman and hog raiser.

Some very effective sheep-management demonstrations have developed from the lamb-killing demonstrations held in the sheep and goat country. Seeing is believing when you open up a lamb having both stomach worms and tapeworms.

As a result of closely associated problems in livestock raising, meat work has become increasingly important in extension animal-husbandry programs.

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Indiana Livestock-Market Tours

In order to understand better how their livestock is handled and sold and the kind and quality the present-day market demands, Indiana farmers are being given an opportunity to visit their terminal livestock markets by means of organized county tours made possible by the cooperation of the Producers Commission Association, the stockyards company, the packer-stockyards administration, the Government price reporting service, the packing plants, and the marketing division of the farm-management extension department of Purdue University. These tours consist of an inspection trip through the stockyards during which the cattle, hog, sheep, and calf alleys and pens are inspected, Government inspected scales are observed and procedure in weighing and sorting are explained. During the trip through the alleys, demonstrations showing the different grades of hogs, lambs, and calves are presented by the various salesmen who point out the kind, quality and weight of animals desired by the trade, giving prices received for the various grades. During August, 1932, seven of these tours were conducted, four on the Indianapolis market and three on the Cincinnati market. The average attendance of farmers was 56. A group from Fayette County visited the Indianapolis market on September 13. The important points stressed were operation of the market; market demands; grades and prices; outlook; marketing problems; and producer responsibility. Time was given for discussion and answering questions presented by the visitors.

--Purdue Extension News Notes

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BEEF-CATTLE EXTENSION WORK IN INDIANA

By P. T. Brown
Extension Service, Purdue University

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The extension work on beef cattle in Indiana has been confined almost entirely to the breeding phases of production. The two approved projects are the Hoosier Thousand Pound Calf Club and the Commercial Beef Cattle Production Project. Lack of time to develop and carry on a project with steer feeders has been the limiting factor in our beef-cattle program. Furthermore, Government statistics show that more than 60 per cent of all fat cattle that reach public stockyards from Indiana farms were bred as well as fed in Indiana. The further fact that all beef-cattle experimental work at the Indiana station had dealt with problems of chief interest to the commercial steer feeder led us to devote the major part of our extension work to problems of the commercial cattle breeder.

Our aim throughout this work has been to demonstrate how to make the raising of beef cattle most profitable by lowering production costs and increasing the returns from the cattle that are produced.

Methods used in carrying on this work are similar to those used in a good many other extension projects. The county agent assisted by his county beef-cattle committee has charge of the work within the county. This committee takes up the work with the idea that it will give the cattle growers of the county an opportunity to study the methods of the most successful cattlemen. Cooperators who will keep feed records for one year on the beef breeding herd are enlisted. These records are begun about December 1 when cattle come in from pasture and are put into winter quarters. The following fall when the year's records are being closed, the county agent and his committee arrange for a tour or meeting at which time the records of the cooperators of the county are discussed and their methods studied. These maintenance records lead to many good discussions on how to maintain the breeding herd most economically. At these meetings there frequently develops some decided differences of opinion as to how thin the cows should be kept during winter. But the inevitable result of these discussions and tours is to bring out the principle that the Corn Belt cow herd can be maintained quite cheaply by using grass during summer, and stalk pasture, winter grass pasture, and cheap, unsalable roughages during winter.

The question of how best to feed and manage the calves produced in the herd always comes up for its full share of discussion at these meetings. An effort is made in each county to have records kept on the amount of feed consumed by the calves that are managed in different ways. There is an ever-growing interest in our State in the feeding of calves during the nursing period. The records kept on calves handled in this way are of special interest to our beef producers. The relative merits of hand feeding and creep feeding are always discussed. These calf-feeding records have been an important means of teaching farmers that nursing calves make the most gains on a given amount of grain and that early calves fed throughout the nursing period can be fat enough for the fall market.

Cooperators having fall calves are enrolled in the Hoosier Thousand Pound Calf Club. The rules of this project require that calves be fed until one year of age, special recognition being given owners of calves that make weights of 1,000, 900, or 800 pounds respectively. The procedure outlined by this club is economically sound because calves born in the fall can be fed throughout their first year and then sold on the higher market which usually prevails during the latter half of the year. This club has been an important means of inducing our cattlemen to full feed their nursing calves.

Another point always demonstrated on these tours is the value of a good sire in a commercial herd. Cattlemen are quick to note the differences in the breeding ability of different bulls and these demonstrations have resulted in many men purchasing better bulls.

The work dealing with our commercial cattle breeders may be summarized by saying that the maintenance records furnish the material for teaching the importance and the methods of reducing the cost of producing calves while calf-feeding records furnish material for demonstrating feeding and management methods. Incidentally, Indiana farmers have shown a decided preference for tours rather than meetings. A tour furnishes more opportunity for study of feeding and management methods.

In addition to the regular projects we also spend considerable time each year on demonstrations with 4-H Beef Calf Club members. These demonstrations bring out various phases of feeding, fitting, and showing beef calves and are usually given as a part of the program on a calf-club tour. This work is always tied up as closely as possible to our adult work showing the importance of feeding young calves for the fall market and the importance of a good sire.

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MEAT-SAVING PROGRAM IN SOUTH CAROLINA

by

J. R. Hawkins, Extension Animal Husbandman.

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Conserving the farm meat supply in South Carolina constitutes an annual problem, but this year the subject is receiving more attention than usual. Recalling the loss in cure of their meat last year, farmers are seeking safer methods not alone to save meat from spoiling, but which will result in a product of good quality. Slaughtering the hogs and curing or canning the meat offers an alternative to selling hogs at the prevailing, low market prices.

The need for keeping this product at home is shown by the fact that South Carolina annually imports 139,500,000 pounds of meat and meat products, more than half of which is pork and lard. Although the hog population has increased more than 30 per cent in the last two years, we have a long road to travel before enough hogs are produced to supply home needs. Again, a good market exists for country cured hams of quality, as shown by the fact that two cured hams almost equal the value of the live hog from which they came.

In order to meet the situation adequately and to prevent the serious losses sustained last year, four practice demonstrations in cutting and curing pork were held, which were attended by every county agent and assistant agent in the State, district agents, and others interested. The services of K. F. Warner, animal husbandman in charge of meat extension with the United States Department of Agriculture, were secured to give instructions in the cutting and curing of pork. Mr. Warner spent the week of October 3-9 at this work in our State, and his efforts have resulted in a demand for more community meetings and demonstrations in cutting and curing pork than has ever been experienced before. During a period of 30 days, 20 different communities were reached with demonstrations in cutting and curing pork, and these meetings were attended by 1,142 interested farm men and women. Following the cutting demonstrations, the home agent, in most cases, has given a demonstration in canning loins, spare ribs, sausage, and other products. It is hoped that with this start, and with the training received at the practice demonstrations under Mr. Warner, the county agents will be able to continue this work and extend it in the counties.

The number of ice and cold-storage plants receiving meat for storage while in cure is now more than double that of last year.

Mr. J. T. McAlister, extension agricultural engineer, has designed and constructed a number of relatively inexpensive home-made ice boxes for holding meat under refrigeration while in cure. This equipment is particularly needed where space in cold storage plants is not available.

Thus we are meeting the farmer's inclination to increase the quantity and improve the quality of meat conserved on farms, (1) by demonstrations in cutting, curing, and canning both pork and beef, and (2) by making refrigeration facilities available for holding the meat at a proper temperature while in cure. A definite effort has been made to train all county agents for continuing the demonstration work in meat cutting and curing, and we feel that we have made a good start towards conserving the farm meat supply as part of the "Live at Home" program.

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New Film Strips Available

The following additional film strips, of interest to animal husbandry extension workers, have recently been made available -

Series No. 121 - Better Sires - Better Stock - 49 frames.
" " 243 - Curing Pork on the Farm - 27 frames.
" " 278 - Some Principles of Breeding. Demonstrated with the Herediscope - 40 frames.
" " 296 - Parasites of Sheep - 25 frames.
" " 297 - Parasites of the Horse - 21 frames.
" " 298 - Dressing and Cutting Pork on the Farm - 43 frames.

Requests for these film strips should be addressed to Extension Service, United States Department of Agriculture, Washington, D. C.

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Deferred Payment on Boars

The latest form of deferred payment is brought to light with an announcement from the Oregon Agricultural College stating that a number of hog raisers in Wallowa County, Ore., have taken advantage of an arrangement made with the Portland Union Stock Yards Co. for purchasing purebred boars for their farms. The report states that four Duroc and two Poland China boars were purchased, at the 1932 Oregon State Fair, for farmers of Enterprise, Oreg. The boars were selected by the county agricultural agent and a college livestock specialist. Farms obtaining these boars will pay for them out of returns from the first shipment of fat hogs sired by them.

--U.S.D.A. Daily Digest.

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MINNESOTA LAMB-GRADING CAMPAIGN

by

W. E. Morris, Minnesota Extension Service

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From reliable market authorities at South St. Paul we learned that only 35 to 50 per cent of our native lambs "top" that market. The reasons given were that a high percentage do not carry sufficient fat or condition, about 25 per cent came in as bucks and 25 per cent have long tails. With the existing low prices, it was evident that if any profit was to come from the sheep business this year in Minnesota it would be necessary that the bulk of the lamb crop be sold as top lambs.

We believe that most of the under-fat lambs are sold before they are fat because their owners did not know what constituted a fat or market-topping lamb. For that reason this campaign or series of demonstrations was planned with a view to demonstrating in all sheep-producing counties, (1) what is required in a market-topping lamb, and (2) to give producers an opportunity actually to see the difference between top lambs and those of lower grades. In this way the producers learn how to select top lambs from their own flocks. This program also included a discussion on the best method of handling those lambs which were not ready for market so as to bring them to a top market condition and grade before offering them for sale.

The period from July 15 to August 31 was chosen as the time for the campaign, a very busy season, and for that reason a difficult time to secure attendance at meetings. This was realized when the campaign was planned but it was felt that this program should be put on sufficiently early to catch the early lambs produced in the State.

In order to cover the State in such a campaign, it was necessary to secure the cooperation of other agencies having men available and qualified to put on such demonstrations. Therefore, cooperation was obtained from the Central Cooperative Marketing Association, South St. Paul; the Stockyards Co., South St. Paul; the Producers Livestock Marketing Association, Sioux City, Iowa; the Northern Pacific Railroad; the Great Northern Railroad; the Chicago, Milwaukee, St. Paul & Pacific Railroad, the Soo Line; and the Minneapolis & St. Louis Railroad. Representatives from these agencies with men from the extension service handled the demonstrations in the various counties.

Before any field demonstrations were held, representatives of all the cooperating agencies met at South St. Paul where a demonstration on grading lambs was given and a discussion held on how to handle lambs grading below "top". The demonstration was conducted by Mr. Carnes and Mr. Bayne of the Central Cooperative Marketing Association. Mr. Peters of the animal husbandry department discussed the handling of below-top-grade lambs so as to bring them to top-market condition and price.

In organizing the campaign, all counties were given an opportunity to request these meetings. The schedules were then made out and assigned to the various agencies cooperating.

Publicity material was prepared by our publicity office. A series of three State-wide articles giving the purpose and plan of the demonstration was released. County publicity consisting of four articles for release at various times, giving the purpose of the meetings, the need for such work, the advantages to be derived from it, and the location of the meeting was prepared and finally, a letter was sent by the county agent to all the sheep growers in this county, inviting them to attend one of the meetings.

Instructions were also sent to the county agents, from the extension service, concerning the organization and conduct of the demonstrations. These instructions included recommendations for selecting the flock for demonstration purposes, the method of conducting the meeting, and gave recommendations on feeding and management of the lambs to bring them to top condition.

Reports from the cooperators indicate that they all considered the campaign very much worth while. All cooperators expressed a belief that a similar campaign should be held next year. A summary of the meetings follows:

Number of counties in which demonstrations were held..	51
Number of days devoted to this work.....	96
Number of demonstrations held.....	173
Total attendance.....	2,800
Average attendance.....	16
Number of meetings reported as good.....	151

(The 22 remaining demonstrations were not considered entirely satisfactory for various reasons).

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RECENT PUBLICATIONS

"Feeding Hogs on Illinois Farms" by W. E. Carroll - Illinois Experiment Station Circular No. 395.

"A Study of Mortality Among Young Pigs" by Aubel and others - Kansas Experiment Station Technical Bulletin No. 31.

"An Economic Study of the Hog Enterprise" by John A. Hopkins, Jr. - Iowa Experiment Station Bulletin No. 294.

"Hog Feeding Experiments" by F. B. Headley - Nevada Experiment Station Bulletin No. 125.

"The Use of Tankage and Alfalfa When Hogging Down Corn" by Vinke and Morgan - Montana Experiment Station Bulletin No. 257.

"Price Differences Between Four Hog Markets Used by Illinois Stockmen" by Norton and Ashby - Illinois Experiment Station Bulletin No. 380.

"Relation of Daily Prices to the Marketing of Hogs at Chicago" by Howard J. Storer - Cornell (New York) Experiment Station Bulletin No. 534.

"Wheat Alone Vs. Wheat and Tankage for Fattening Pigs" by Oliver S. Willham - Panhandle Agricultural and Mechanical College Bulletin No. 37.

"Pork on the Farm" by Paul F. Newell - Mississippi Extension Service Bulletin No. 65.

"The Use of Ice in Curing Pork on the Farm" by Grimes and others - Alabama Experiment Station Circular No. 62.

"Horses Grown on Limited Grain Rations" by Trowbridge and Chittenden - Missouri Experiment Station Bulletin No. 316.

"Blackstrap Molasses for Farm Work Mules" by Snell and Taggart - Louisiana Experiment Station Bulletin No. 230.

"Fattening Western Lambs" by King and Harper - Purdue (Indiana) Experiment Station Bulletin No. 360.

"Lamb Feeding" by Jones and Smith - Texas Extension Service Publication No. C-96.

"Sheep and Lamb Price Facts" by W. B. Stout - Purdue (Indiana) Extension Service Leaflet No. 166.

"Yearling Heifers and Steers for Beef Production" by Trowbridge and Moffett - Missouri Experiment Station Bulletin No. 314.

"Feeding Beef Calves" by Smith and Jones - Texas Extension Service Publication No. B-78.

"Winter Vs. Summer Feeding of Corn to Heavy Steers Finished on Grass" - "Wheat as a Fattening Feed for Yearling Steers" by Good and Harris - Kentucky Experiment Station Bulletin No. 332.

"Beef Cattle Price Facts" by W. B. Stout - Purdue (Indiana) Extension Service Leaflet No. 164.

"A Study of Range Cattle Management in Alachua County, Florida" by Paul D. Camp - Florida Agricultural Experiment Station Bulletin No. 248.

"Inexpensive Silos for Kansas" by Linn and others - Kansas Extension Service Circular No. 94.

"An Inexpensive Machine for Filling the Trench Silo" by Ellis G. Diseker - Alabama Experiment Station Circular No. 61.

"Profits from Winter Feeding in Northern Colorado" by Burdick and Pingrey - Colorado Experiment Station Bulletin No. 394.

"Locoism in Domestic Animals" by Frank P. Matthews - Texas Experiment Station Bulletin No. 456.

"Rye as a Fattening Feed for Cattle and Swine in South Dakota" by Wilson and Wright - S. Dak. Experiment Station Bulletin No. 271.

"Statistics of Livestock Marketing and Livestock Trucking in Iowa, 1931" by D. A. Fitzgerald - Iowa Experiment Station Circular No. 136.

"The Contract Feeding for Livestock" by R. R. Thalman - Nebraska Experiment Station Bulletin No. 274.

"Cost of Marketing Livestock by Truck and Rail" by Thomsen and Fankhanel - Missouri Experiment Station Research Bulletin No. 165.

"Landlord - Tenant Livestock Leases" - Texas Extension Service Publication No. C-88.

"Farm Practices that Pay" by Case and Mosher - Illinois Experiment Station Circular No. 389.

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